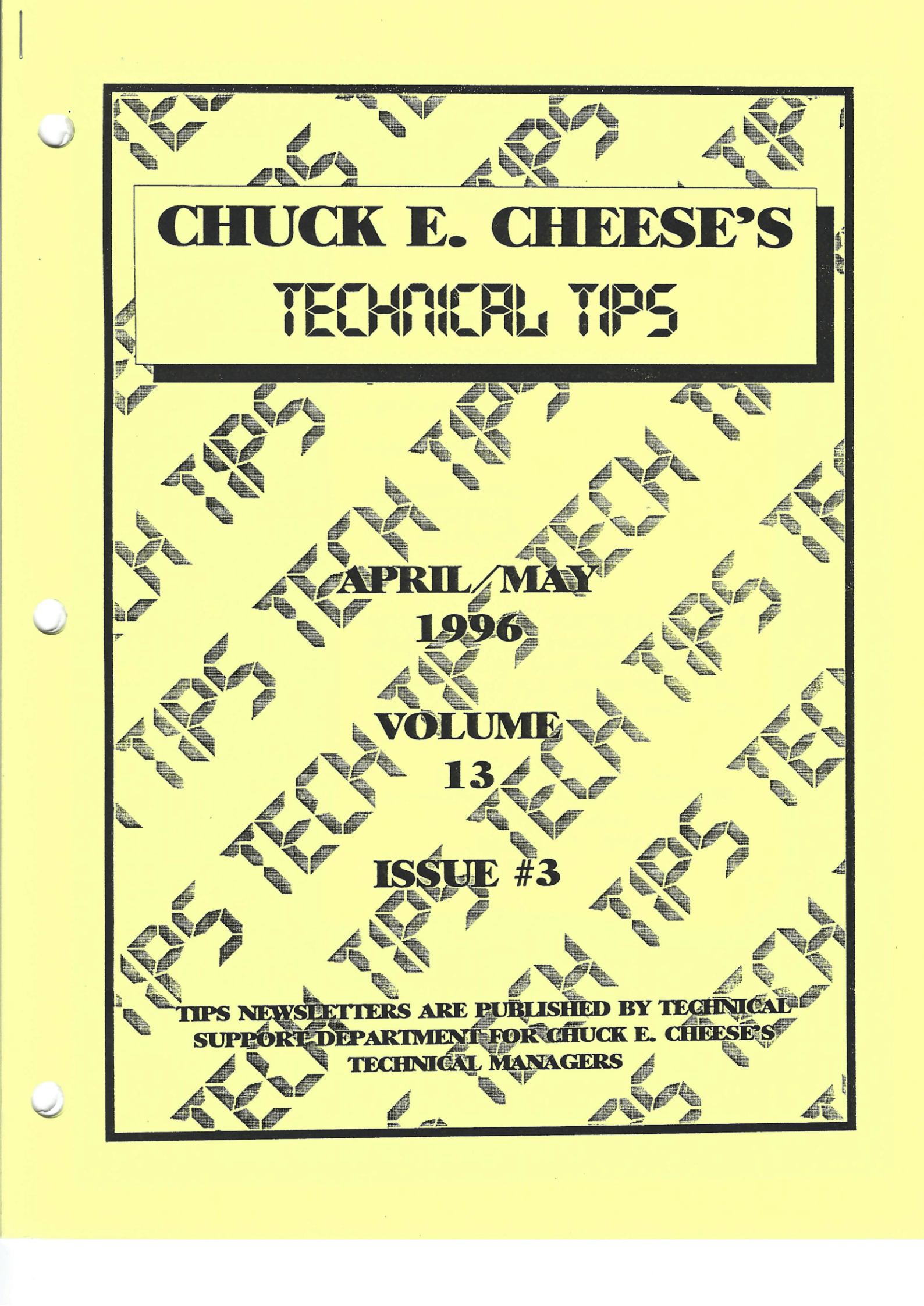




CHUCK E. CHEESE'S TECHNICAL TIPS

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THE MATERIAL IN THIS PUBLICATION IS
FROM YOU THE TECHNICAL MANAGER.
TO MAKE SURE YOUR IDEAS ARE
SHARED WITH THE OTHER TECHNICAL
MANAGERS, PLEASE SEND YOUR TIPS
TO:

SHOWRIZ PIZZA TIME, INC.
ATTENTION: TECHNICAL ADVISORS
P.O. BOX 152077
IRVING, TX 75015



TABLE OF CONTENTS

What's Happening in the World of Parts	3
Amutec Timer Control Box	4
Procedures to Replace Gun Glass on Dinoscore ...	4-6
Common Flipper Troubles, Symptoms, and Solutions	6-7
Dynamo Air Hockey Anti-Cheat Retrofit Kit	7
Input to Tips	7
Troubleshooting Guide for the DL-1275 Ticket Dispenser PCB	8-9
Parts Price List	9

WHAT'S HAPPENING IN THE WORLD OF PARTS

DIGGERS PRIZE PARTS FOR SALE!!!!

If you are looking for Diggers Prize parts, the Parts Department has the following parts in stock and ready to be shipped out. When ordering, please refer to the following Part #'s to assure quick and accurate service.

GCDP-0001	ADAPTER ELBOW	14.01
GCDP-0002	BELT, CONVEYOR	255.44
GCDP-0003	SCOOP-BTM-YELLOW	18.25
GCDP-0004	BEARING EE4 RS	15.67
GCDP-0005	FILTER/REG. 1/8	51.99
GCDP-0006	SWIVEL ELBOW	21.97
GCDP-0007	HOPPER BOX-MAT	118.07
GCDP-0008	0156 REGULATOR PCB	38.65
GCDP-0009	OILITE BUSH	9.68
GCDP-0010	ROLLER, KNURLED (TOP)	49.85
GCDP-0011	SCOOP-LID YELLOW	15.36
GCDP-0012	SHAFT, 1/2" O.D.	15.44
GCDP-0013	PERSPEX, HOPPER CHUTE PANEL	85.34
GCDP-0014	ARM, SECTION "A-B"	36.13
GCDP-0015	DECAL, FRONT DOOR	73.44
GCDP-0016	PROXIMITY SWITCH	72.29
GCDP-0017	BALLS, 22MM, PURPLE	.06
GCDP-0018	0088 PCB UNI-MIC CONTROLLER	228.06
GCDP-0019	40 RPM MOTOR & GEARBOX (240V)	273.83

AMUTEC TIMER CONTROL BOX

(with both volume & time adjust knob)

Symptom: No audio or static

Possible Solution: First, check to see if the wiring to the speaker is not damaged or has opened the circuit. The speaker rarely fails but check to be sure that you read 8 ohm's across the two speaker terminals or wires while disconnected from the timer box.

Next, remove the top of the timer box and locate IC11 (a LM380 two watt audio power amp chip). With the volume and timer knob facing you, the chip is located near the transformer to the left.

The best way to replace the chip is to use a small pair of wire cutters and cut all 14 pins of the chip. Then, by applying heat to the remaining pins on the PCB, use a long nose pair of pliers to remove each pin from the PCB board.

Now, use a de-soldering tool to remove any remaining solder in the holes, and insert a 14 pin socket into the holes while observing the correct notch position.

After the socket is soldered in place, insert the replacement LM380.

If all goes well, the audio should be returned to your box.

PROCEDURE TO REPLACE GUN GLASS ON DINOSCORE

1. The right edge of the door must be removed to gain access. This action necessitates the removal of the neon tube around the frame of the door. While the neon is fragile and easily broken, it can be safely removed with proper care.

Caution: Always wear safety glasses when working with glass, and unplug the machine from the source.

2. 3-Piece neon. Remove the plastic cover from the door edge. Remove the two vertical pieces from the bottom first, then the top piece.
3. On the inside of the door, loosen the cable clamps securing the neon wire to allow slack in the cable.
4. Carefully cut the silicone holding the vertical right tube to the frame, insure the entire tube is free from the frame.
5. Slide the insulator at the bottom of the right vertical tube onto the connecting wire. Untwist the connection.
6. Slide the insulator at the top of the right vertical tube down onto the tube and untwist the connection, set the tube aside.

7. Carefully cut the silicone holding the upper half of the vertical left tube to the frame. Slide the insulator between the left side and the top neon down onto the side neon. Untwist the connecting wires.
 8. Carefully cut the silicone between the top neon tube and the door. When properly done, the tube will easily slide off the top of the door.
 9. Inside the door, remove the two fasteners holding the lock bars to the lock. Remove the lock bars.
 10. Inside the door, remove all fasteners holding the right vertical aluminum frame to the door. Using a rubber hammer, tap the vertical aluminum free.
 11. Remove the lock assembly from the glass pane.
 12. Remove the old glass and completely clean the glass fragments.
 13. Remove the weather stripping surrounding the glass. Remove any unnecessary salient.
 14. Slide the new glass in place. Use WD-40 or similar lubricant as necessary. A rubber hammer is handy in moving the glass into position.
 15. Re-install the weather stripping.
- Secure into place with construction adhesive.
16. Re-install the right side door and secure with the fasteners previously removed.
 17. Slide the top neon over the top of the door. Connect the left side to the left vertical neon by twisting the wires together. Slide the insulator up to cover the connection.
 18. Position the right vertical neon in place (insulator end up). Temporarily hold the tube in place with masking tape. Connect it to the top neon by twisting the wires together. Slide the insulator up to cover the connection.
 19. Feed the neon wire from the inside of cabinet through the hole at the bottom of the right frame, install the insulator on the wire and connect the wire to the bottom of the right vertical tube by twisting the wires together. Slide the insulator onto the tube to cover the connection.
 20. Install new silicone at the same positions as previously used. Position the tube well into the recess so the plastic cover will not contact it. Hold it in place with masking tape until the silicone is set. (Approximately 15 mins.).

21. Re-position the neon wire previously loosened and secure into place.
22. Apply power to the unit and insure the neon is functional. Trouble shoot as required.
23. Re-install the plastic cover by taping into place. Install the top cover first, then the sides.

COMMON FLIPPER TROUBLES, SYMPTOMS, AND SOLUTIONS

Symptom: No flip. At all.

Check the fuse. If it's good, make sure your main 50Vdc power is getting to the flipper (check the manual for the proper wires to check).

If it is, make sure your flipper cabinet buttons are okay. High voltage switches (non-Fliptronic games) are notorious for oxidation buildup on the switch contacts. Drag a business card through the contacts to clean them.

Fliptronic systems on WPC games have coil tests specifically for flippers. This helps you identify what coil is the problem. The Fliptronic system also continually tests the EOS switches and cabinet switches. Problems will be noted on the game's error report upon entering test mode.

Still No Go?

Remove the coil, unsolder its diodes

and check for continuity. An open circuit, after the diodes are removed, for either part of the coil (the common terminal to both the other terminals one at a time) indicates a bad coil that needs replacement. Usually the holding side of the coil goes bad, but the power side has also been known to fail.

Still no go? Follow the circuit from the transformer right on through the power supply until you find the point where it stops. That'll be the problem.

Symptom: Weak Flip.

Check the plunger shaft and coil stop for mushrooming. A mushroomed plunger dragging against the coil sleeve is a classic cause of a weak flipper.

The plunger should slide smoothly and cleanly back and forth inside the coil. Any resistance indicates a problem.

Also, check for a worn out EOS switch, if this is a non-Fliptronic system. An EOS switch with high resistance will cause the high power side of the coil to permanently disengage from the circuit. This leaves only the holding side of the coil to provide power, not near enough.

Symptom: Flipper Bounce *(newer or new games)*

This is what has been reported as "new flipper" syndrome - where a brand new game has bad flippers...

usually flippers that stay up a bit after the button is released. This is due to the plastic interrupters used on the flipper button optos. The plastic heats up and its elasticity is severely affected, causing it to not instantly spring back when the button is released. The only solution is to replace the plastic (and hope) or put in a metal interrupter, like *TAF* and *TZ* use.

Symptom: Flipper Chatter

Broken holding (low power) coil or bad low power driver on a Fliptronic board. Possibly also a broken wire to the terminal for the holding side of the coil.

Symptom: Stuck Flipper

EOS (End-of-Stroke) paw on crank has a worn out rubber sleeve. This can etch a hole in the EOS switch into which the paw then gets stuck. Put new 1/4" heat shrink tubing on the paw and replace the EOS.

Flipper crank tightened too tight on shaft. This causes excessive binding between the playfield bushing and the crank assembly. There should be around 1/32" (enough for a slight wiggle) of a gap. If the paddle does not have a slight bit of vertical movement, it's too tight. Most games are shipped with an adjustment tool you can use to check for proper spacing.

A mushroomed plunger or driver failure has caused the coil to

meltdown around the plunger, causing it to stick in the up position. If you smell a strong burning plastic odor, this is likely the cause. Fix the driver FIRST or you'll end up burning another coil out.

This article was taken from the Star Tech Journal, January 1996 issue.

DYNAMO AIR HOCKEY ANTI-CHEAT RETROFIT KIT

Subject

Anti-Cheat coin chute retrofit kit now available for *Dynamo Air Hockey* tables.

Symptom

Players accumulate credits by slowly rocking the push chute in and out thus tripping the credit switch many times.

Solution

Although this problem can be eliminated by adjusting the push chute properly, the kit (Part # 030400500) will insure that no free credits will be given out.

INPUT TO TIPS

Attached, please find an Input to Tips form that should be used when sending information to the Tech Tips publication. If we use the information sent, your name will appear on the contributors list.

TROUBLESHOOTING GUIDE FOR THE DL-1275 TICKET DISPENSER PCB

Note: The following lists assumes that the technician has isolated the problem to the ticket dispenser.

SYMPTOM	PROBABLE CAUSE	REPLACE
TD runs continuously (from power up).	Leaky or shorted Q2	Q2
TD doesn't run.	Leaky or shorted Q1 Open Q2 Both Q1 & Q2 bad	Q1 & Q2
TD coasts to a stop. Ticket stops same place each time but comes out too far.	Open Q1	Q1
CALL or HELP is displayed or an uneven amount of tickets is dispensed, such as 1 1/2 or 2 1/2 tickets instead of 1 ticket.	Bad optocoupler (H21A1) Bad I.C. (74C14) Bad transistor Q3 (2N2222)	
USE THE TEST PROCEDURE TO DETERMINE WHICH OF THESE 3 COMPONENTS TO REPLACE Also use the parts layout to locate the parts called out.		

Test Procedures:

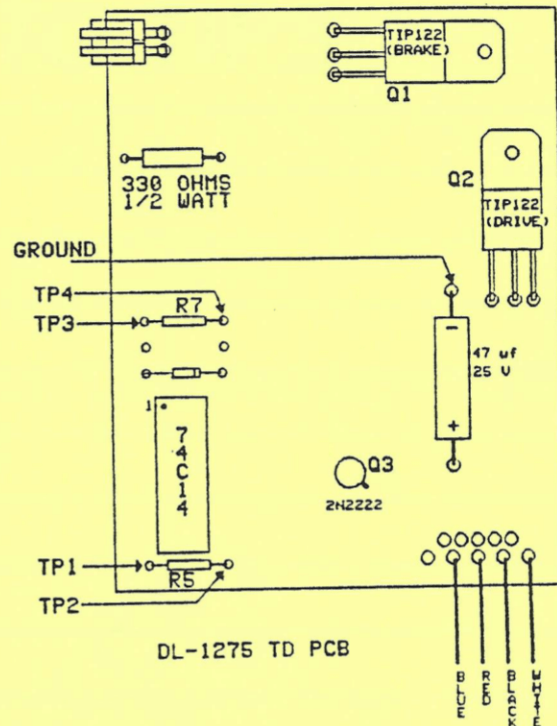
Use a multimeter to make the following measurements while sliding a ticket past the optocoupler so that readings for ticket and no-ticket are determined.

1. Check the voltage at TP1 with a voltmeter. The readings should be 0 to .2 VDC for no-ticket and 11 to 12 VDC with ticket. If OK, go to 2. If not OK, turn off the power and use an ohmmeter to check the 330 1/2W resistor for 297-363 ohms. If not in this range, replace the 330 1/2W resistor. If OK, replace the OPTOCOUPLER (H21A1). Retest TD.
2. Check the voltage at TP2 with a voltmeter. The readings should be 0 to .2 VDC for no-ticket and 11 to 12 VDC with ticket. If OK, go to 3. If not OK, replace the I.C. (74C14). Retest TD.

3. Check the voltage at TP3 with a voltmeter. The readings should be 11 to 12 VDC for no-ticket and 0 to .2 VDC with ticket. If OK, go to 4. If not OK, replace the I.C. (74C14). Retest TD.
4. Check the voltage at TP4 with a voltmeter. The readings should be 0.7 VDC for no-ticket and 0 VDC with ticket. OK indicates TD good - re-evaluate TD or call Deltronic Labs at 215-997-8616 and ask for help. If not OK, replace transistor Q3 (2N2222). Retest TD.

PARTS PRICE LIST

Attached, please find your new parts price lists. These lists are provided for your convenience; so please take a few minutes to look them over.



INPUT TO TIPS

Name:

Location:

Telephone #:

Problem:

Recommended Fix:

Parts/Materials/Supplier/Cost:

**Please attach schematics, drawings,
pictures appropriate.**